

Managing Sustainable Forests

Tips for Small Acreages in Western Oregon

Most woodland owners own fewer than 10 acres of forestland or woodlot. Many want to take care of the land and keep it productive for themselves and for future generations. This is what sustainable forestry is all about.

How Do You Start?

First, you must define those things that you want from your forested property. People own, plant and manage these properties for many reasons. Some reasons for managing the forest include:

- Lower property taxes
- Enhanced beauty
- Greater recreational opportunities
- Fish and wildlife habitat enhancement
- Income from timber and special forest products

While many owners do not expect to profit from their forest, earning forestland income is often compatible with most landowner objectives. For example, thinnings can increase forest health while producing an income. A well managed Douglas-fir plantation may produce a profit of between \$500 and \$1000 per acre from thinning at 15 to 20 years. This thinning will usually increase the growth of the remaining trees.

Managing a forest should include estate planning. Even if you do not plan to harvest your trees, their value will add to the value of your estate. For example, a 60-year-old Douglas-fir stand growing on moderately productive soils will net \$21,000 per acre at a sale price averaging \$600 per thousand board feet. Even 10 acres can be appraised at over a quarter million dollars.

What Type of Forest Do You Own?

In Oregon, we typically think of the forest as dominated by large conifer trees, usually Douglas-fir. Oregon's forests, however, include more than conifers. Oak savanna, ash swales, black cottonwood swamps, and alder thickets might be the predominant species on your property. The factors that will influence what you can do with your forest include:

- Species, including tree, shrub, and understory
- Tree size and volume
- Soil, fertility, aspect, slope
- Tree quality and health
- Accessibility
- Existing wildlife habitat
- The size and location of streams

Your goals and objectives may need to be modified to mesh with your land's natural capabilities.

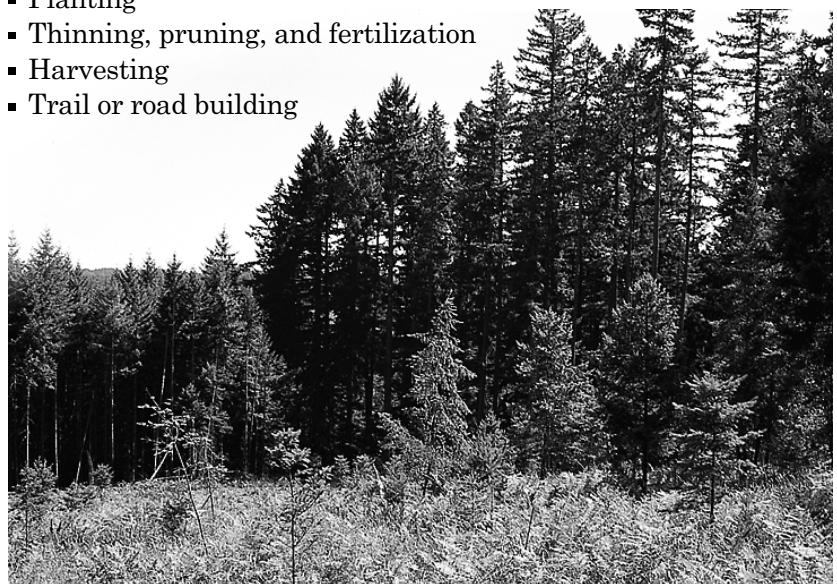
Managing Your Forest

Caring for your land may include:

- Planting
- Thinning, pruning, and fertilization
- Harvesting
- Trail or road building

"He who plants a tree plants a hope."

- Lucy Larcom



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Planting



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Whether planting a pasture, old field, or clearcut, you need to consider the site, soils, and existing vegetation before you plant trees. Douglas-fir and most other coniferous species are often planted on a 10' by 10' spacing. This is just over 400 trees per acre and is more than twice the number of trees required for special property tax assessment. This higher density helps in the establishment of the trees, and provides for potential income opportunities.

Two to three years of work will be needed to establish newly planted seedlings. Site preparation and planting costs average \$400 per acre. Costs can be much higher if the land has Himalayan blackberry, Scotch broom, or other hard-to-control weeds.

Choosing Trees Based on Site and Soils

Your site will determine what trees will grow and thrive. Site characteristics include soil type and drainage, the slope, aspect (direction the land slopes), elevation, and climate. For example, if you have a site with well-drained soils, Douglas-fir will grow well. On a drier, southwest slope, Valley Ponderosa pine will do better than Douglas-fir. The following chart shows some of the characteristics of trees species native to the Willamette Valley.

Tree Species	Shade Tolerance	Drainage	Comments
Douglas-fir	Requires nearly full sun.	Requires well-drained soils.	Brush and grass control important in establishment.
Grand fir	Requires full sun but will regenerate in light shade.	Can tolerate wetter soils than Douglas-fir.	Grows best on deep, moist, well-drained soils.
Western red cedar	Shade tolerant.	Can tolerate wetter soils.	Will not tolerate poorly drained clay soils. Establishment may be difficult due to deer browse.
Valley Ponderosa pine	Requires full sun.	Can tolerate wet heavy soils. Can also tolerate soils with high shrink swell properties.	This species was once commonly seen in the Willamette Valley. In the winter these trees will tolerate standing water.
Oregon white oak	Easier to establish in full sun.	Can tolerate a wide range of soil types and conditions.	Best and quickest growth can be obtained on deep, well-drained soils.

For more information about soils and descriptions of what might be expected to grow on them, see your local soil and water conservation district office.

Preparing the Site

Site preparation does several things, including:

- Creating space for planting
- Reducing fire danger
- Reducing weed competition with the seedling
- Reducing habitat for nuisance animals that might damage the newly planted seedling
- Increasing seedling survival and growth

Site preparation can be accomplished by broadcast burning, mechanical methods, or using herbicides. Fire is not usually an option for the small woodland owner due to the small property size and potential liability issues. Mechanical methods include the use of bulldozers with brush rakes and summer tilling and fallowing. Herbicides are often used in combination with fire and mechanical site preparation methods to further increase tree survival and growth.

Weed Control

Weed control after planting may be required to improve survival and increase growth. Generally, weed control is needed the first year after planting. Weed control increases the soil moisture and light available to the newly planted trees. While shade may cool the soil and air around the seedling, removal of the competing vegetation generally more than compensates for increased heat stress on the trees.

The key points to know are:

- Trees survive and grow best with little competition.
- Grass and overtopping brush is severe competition and may kill newly planted seedlings.
- The method of removing competing vegetation is less important than getting the job done. The grass and brush must be pulled or killed. Mowing the grass or cutting the brush does not necessarily reduce competition.
- Use large, healthy planting stock. Seedling transplants such as 1-1 or 2-1 will often save money in the long run. A 1-1 seedling is 2 years old and has been transplanted after one year.
- If using a herbicide, seldom is it a good idea to cut the brush first. Apply herbicides according to the label.



Raccoon



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Thinning, Pruning, and Fertilizing

If you have an established stand of trees, they may need to be thinned. Thinning is conducted to improve both the quality and value of the forest. The advantages of thinning include:

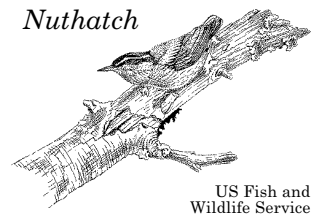
- Reducing competition between trees
- Increasing tree growth
- Creating openings for wildlife
- Controlling the species composition of the woodlot

Thinning can be from below by removing the smaller, weaker trees or from above by removing larger trees, thus releasing smaller trees. With either method, leave trees should have at least one-third to one-half of their total height in live crown.

Pruning and fertilization are other management activities you can do to manage your forest. Pruning improves the quality of the tree for future harvest. Fertilization can increase the growth and health of the trees.



Nuthatch



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Wildlife Service

Harvesting

In a Douglas-fir forest, the most common form of harvest is the clearcut. A clearcut usually provides the ample space and light needed for newly planted Douglas-fir seedlings. Other harvest methods, such as seed tree, shelterwood, or thinnings can be used to encourage other species or a mixed species forest. Prior to any harvest, match your harvest method to your objectives.



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Trails and Roads

A well-planned system of trails and roads provides access for fire control, recreation, and harvest. It also minimizes the impact to the remaining forest soils. Keep in mind the following when planning forest roads:

- Forest roads can be a significant cause of soil erosion.
- Plan your road system to minimize impacts to wet areas, steep slopes and streams.
- Install and maintain culverts at appropriate locations.
- Maintain road ditches to reduce road washouts and erosion.

The Forest Practices Act

Oregon has one of the most comprehensive forest practices acts in the nation. This State law serves to protect Oregon's forests. In summary:

■ After harvest, trees must be replanted.

This is true regardless of how the land is zoned or taxed. If the land has a forest now and the forest is harvested or stocking is reduced to below 80 square feet of basal area per acre, then you must reforest the property.

■ All forest management actions or activities, except planting, require you to file a notice of operations with the Oregon Department of Forestry.

There is no fee. The best way to determine how to file a notice is to bring a map of your property to your local Oregon Department of Forestry and to work with the Forest Practices Forester to fill out the form. The act also restricts activities near streams, allowing some harvest with an approved management plan.

The Forest Practice Act applies to every operation a private forest landowner conducts. Notify the Oregon Department of Forestry of any forest management activity at least 15 days before beginning. You will need a map of your property showing the location of the management activity, and the legal description of the area. Forms are provided by the Oregon Department of Forestry. Failure to notify the Department may result in fines.



The material presented outlines some of the things you need to know to make an informed decision about how you will manage your property. More details may be obtained through:

- The Oregon State University Extension Service offers forestry publications, seminars, and field tours. More in-depth training is available for landowners to become "Master Woodland Managers." A list of publications is available on the website www.orst.edu. Your local Extension Service office is listed in the blue pages under State government in the phone book.
- The Oregon Department of Forestry (ODF) provides on-site technical advice and administers the Forest Practices Act and several cost-share programs. Cost-share funding is provided through the U.S. Forest Service. Your local ODF office is listed in the blue pages under State government in the phone book.
- The local Soil and Water Conservation District (SWCD) and the USDA-Natural Resources Conservation Service (NRCS) provide conservation planning that includes forest management. The NRCS administers forestry cost-share through your local USDA Service Center. Your local SWCD and NRCS office is listed in the blue pages under Federal government, Department of Agriculture, in the phone book.

